

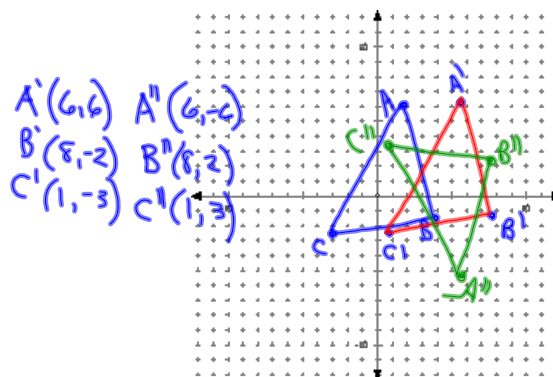
9.5 Apply Compositions of Transformations

Glide reflection--transformation that is a translation followed by a reflection

When two or more transformations are combined, then the result is a composition of transformations.

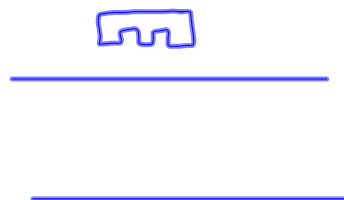
$A(2, 6)$ $B(4, -2)$ $C(-3, -3)$

Find the image of the triangle after the translation $(x, y) \longrightarrow (x+4, y)$ and then the reflection in the x-axis.

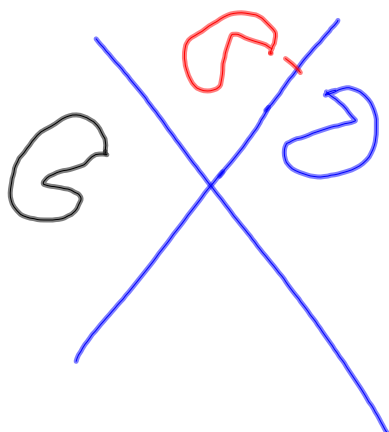


Reflections in parallel lines--same as a translation

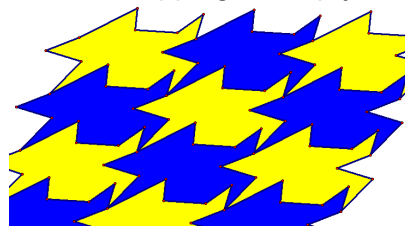
gsp

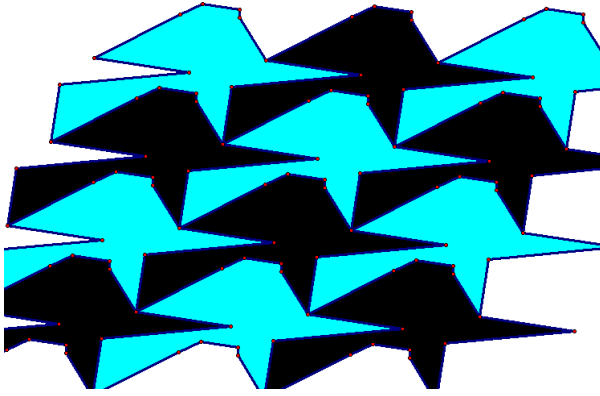


Reflections in intersecting lines--same as a rotation about the intersection where the angle of rotation is 2 times the acute or right angle of intersection



Tessellation--a pattern that covers a plane by transforming the same figure, or a set of figures, so that there are no overlapping or empty spaces





Not all shapes will tessellate.

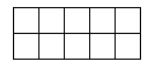
Parallelogram

Equilateral Triangle

a tessellation of triangles

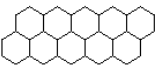


a tessellation of squares



Hexagon

a tessellation of hexagons

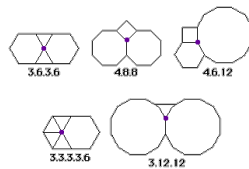


Semi-regular Tessellations

You can also use a variety of regular polygons to make **semi-regular tessellations**. A semiregular tessellation has two properties which are:

1. It is formed by regular polygons.
2. The arrangement of polygons at every vertex point is identical.

Here are the **eight** semi-regular tessellations:



<http://www.tessellations.org/index.htm>



Squirrels



Smaller and smaller

http://www.shodor.org/interactivate/activities/tessellate/?version=1.5.0_04&browser=MSIE&vendor=Sun_Microsystems_Inc.

Do on your own.

<http://www.tessellations.org/slicemethod-ex1-1.htm>

<http://www.geogebraTube.org/material/show/id/8550>

dogs--click line and tile, then the parts

<http://www.geogebraTube.org/material/show/id/4378>

Pegasus--click on points in left corner and translate

HW
p611-612
#s 3, 5, 6, 10, 13, 14, 20, 21

Attachments

1936-squirrels[1].jpe

9_5reflections_ex.gsp